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1347. Influence of standardizing diet on nitrogen metabolism during caloric restriction.

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Rats were fed one of four standardizing diets to maintain body weight: *a*) commercial stock diet; *b*) commercial diet diluted with sucrose; *c*) 28% casein-purified diet; *d*) 18% casein-purified diet. Forty-six calories were required to maintain body weight at 300 gm; at this level diets *a* and *c* supplied 450 mg of nitrogen and diets *b* and *d*, 270 mg. All groups were shown to be in positive nitrogen balance during standardization management. Animals were sacrificed for nitrogen determinations of liver, plasma and carcass. Nitrogen stores were not significantly different. For the succeeding 12 days all animals were supplied a maintenance level of nitrogen, 160 mg daily, from a high fat-egg albumin diet while restricted to half the caloric requirement. Nitrogen balances and composition studies were made periodically. Animals pre-fed commercial rations showed markedly greater body weight and nitrogen losses during the first two days than those pre-fed casein diets. These differences diminished after the 4th day. In the early period, losses of liver nitrogen were also largest in the high nitrogen commercial ration group. However, all groups ultimately lost approximately 20% of the total liver nitrogen. Plasma and carcass proteins declined more gradually.